Ser. No. 09/614,635

CLAIMS

1. (currently amended) An apparatus for generating processor-specific multimedia routines dynamically, comprising:

    a computer; and

5   an image processing program executing on said computer, said program including multimedia enhanced instructions for processing ~~multimedia~~ image data, ~~said program further including:~~,

    an abstract routine generator within said image processing program for receiving a data stream comprising an ~~multimedia~~ image-processing routine that includes

10   multimedia enhanced instructions and for outputting a non-processor-specific abstract representation thereof at program startup; and

    a translator within said image processing program for said abstract routine generator for receiving said abstract representation and for outputting processor-specific final code translated from said non-processor-specific abstract representation for processing

15   multimedia input data at program startup.

2. (currently amended) The apparatus of Claim 1, wherein said abstract routine generator builds an abstract routine during program runtime.

3. (original) The apparatus of Claim 1, wherein said abstract routine generator builds an abstract routine in the form of a graph.

20

4. (currently amended) The apparatus of Claim 1 wherein said ~~multimedia~~ image data comprise SIMD input data.

5. (currently amended) The apparatus of Claim 1, wherein said ~~multimedia~~ image

25   data comprise image input data.

6. cancelled

2

7. (original)   The apparatus of Claim 3, wherein said graph is input to said translator.

8. (original)   The apparatus of Claim 3, wherein the output of said translator is in assembly code.

5

9. cancelled

10.(original) The apparatus of Claim 1, wherein said processor-specific code performs any of the operations of add, sub, multiply, average, maximum, minimum,

10   compare, and, or, xor, pack, unpack, and merge on said input data.

11.(original) The apparatus of Claim 3, wherein said graph is a function of any of source block, target block, change in the block, color, stride, change in stride, display block, and spatial filtering.

15

12. (Currently Amended)   A method for generating processor-specific multimedia routines dynamically, comprising:

providing a computer; and

an image processing program executing on said computer, said program
20   including multimedia enhanced instructions for processing multimedia
image data, said program further including:

an abstract routine generator within said image processing program for
receiving a data stream comprising an multimedia image-processing
routine that includes multimedia enhanced instructions and for outputting
25   a non-processor-specific abstract representation thereof at program
startup; and

a translator within said image processing program for said abstract routine
generator for receiving said abstract representation;
and for

3

Ser. No. 09/614,635

outputting processor-specific final code translated from said non-processor-specific abstract representation for processing multimedia input data at program startup.

5   13. (currently amended) The method of Claim 12, wherein said abstract routine generator builds the abstract routine during program runtime.

14. (Original) The method of Claim 13, wherein said abstract routine is a graph.

10 15. (original) The method of Claim 12, wherein said multimedia input image data comprise SIMD data.

16. (original) The method of Claim 12, said multimedia input image data comprise image input data.

15

17. cancelled

18. (original) The method of claim 14, wherein said graph is input to said translator.

20 19.   (original) The method of claim 12, wherein the output of said translator is assembly code.

20. (original) The method of Claim 12, wherein said processor-specific code performs any of the operations of add, sub, multiply, average, maximum, minimum, compare,

25   and, or, xor, pack, unpack, and merge on said multimedia input data. ·

21. (original) The method of Claim 14, wherein said graph is a function of any of source block, target block, change in the block, color, stride, change in stride, display block, and spatial filtering.

30

22. (Cancelled)

4